

---

January 1999

# FINANCIAL MANAGEMENT

## Review of VA's Actuarial Model for Veterans' Compensation Benefits



---

---

**Accounting and Information  
Management Division**

B-281738

January 29, 1999

The Honorable Togo D. West, Jr.  
The Secretary of Veterans Affairs

Dear Mr. Secretary:

In our report on the fiscal year 1997 consolidated financial statements of the U. S. government issued on March 31, 1998,<sup>1</sup> we noted that the Department of Veterans Affairs' (VA) estimated liability for veterans' compensation benefits was materially understated primarily because it did not include estimates for anticipated changes in disability ratings and for incurred claims not yet reported. Given such limitations, VA's methodology for computing the liability did not comply with Statement of Federal Financial Accounting Standards (SFFAS) No. 5, which prescribes accounting standards for liabilities of the federal government. Prior to the issuance of its own audited financial statements for the department on April 30, 1998, VA revised its model to comply with SFFAS No. 5. Using the revised model, VA's estimated liability as of September 30, 1997, in its April 30, 1998 report was \$466 billion--an increase of \$270 billion over that reported in the consolidated financial statements of the U.S. government for fiscal year 1997, issued in March 1998.

The objectives of our review were to determine whether VA's revised actuarial model complied with SFFAS No. 5 and whether future liability estimates could be improved. This report discusses improvements that VA has made to the model, and our recommendations for additional improvements that should enhance the reliability of estimates produced by the model.

---

**Results in Brief**

VA's revised model resulted in an estimate for fiscal year 1997 that was much more consistent with SFFAS No. 5 than that previously used because it included estimates for anticipated changes in disability ratings and for incurred but not reported claims.

During our review we informed VA officials that the model needed further refinements to comply more fully with SFFAS No. 5. Specifically, the

---

<sup>1</sup>Financial Audit: 1997 Consolidated Financial Statements of the United States Government (GAO/AIMD-98-127, March 31, 1998).

revised model did not include 1.5 million current active military personnel, some of whom have sustained injuries and may qualify for future benefits. Instead, it only included those who had separated from active military service as of September 30, 1997. In response, VA modified its model for fiscal year 1998 by including the current military population, which, according to VA officials, will further increase the liability estimate by about \$12 billion. The VA Office of the Inspector General (OIG) is currently testing the underlying data used in the model as part of its audit of the fiscal year 1998 financial statements.

Also, we noted certain limitations in the data used in the model to develop the estimated liability. VA's fiscal year 1997 liability estimate was based on 1 to 3 years of experience for various data elements (e.g. beneficiary type, age, gender). Studying the experience over such a limited time period may not fully represent the universe of veterans and therefore could cause distortions in predicting future benefits. In addition, VA did not group claimants by conflict-related exposures, such as Agent Orange; therefore the model did not reflect the impact of such events on future benefits. Finally, VA's model did not consider the time lag between date of discharge and date of the initial award, although a veteran's likelihood of filing a claim decreases the longer he/she is out of the service. These data, if considered along with age and beneficiary type, would provide a better basis for predicting the likelihood that a veteran would seek a compensation award. With better experience data over a more extended period of time, VA's model would be more predictive, resulting in a more reasonable liability estimate.

---

## Background

VA provides veterans or their dependents with compensation benefits if the veteran was disabled or died of military service-connected causes. In fiscal year 1997, 2.5 million veterans and survivors received compensation benefits of approximately \$16 billion. VA calculates an estimated liability for compensation benefits expected to be paid in future years to veterans and, if applicable, their survivors, who have met or are expected to meet defined eligibility criteria.

The estimated liability for veterans' compensation benefits first became an area of focus in June 1993, when the Department of Veterans Affairs' Office of Inspector General (VA-OIG) gave an adverse opinion on VA's financial statements for the fiscal year ended September 30, 1992. The adverse opinion was due in part to the fact that VA did not record in the Statement of Financial Position the present effects of the probable future payments

---

for compensation and pension benefits as required by Office of Management and Budget (OMB) Bulletin 93-02.

VA subsequently entered into a contract with a consultant firm to develop a model for calculating an estimate for the present value of future veterans' benefits based on VA's definition of the liability. This model contained numerous spreadsheets with basic assumptions or specific calculations and beneficiaries were segregated according to age and type (veteran, spouse, or child). Based on mortality assumptions and the age of the beneficiaries, the model applied Cost Of Living Adjustment (COLA) assumptions to the expected future benefits, assuming a disability rating would not worsen. Using U.S. Treasury rates, the stream of future benefits was then discounted back to September 30 of the fiscal year. VA continued to use this model through fiscal year 1996.

As part of its annual financial statement audit, the VA-OIG separately contracted with an independent public accountant (IPA) to review and report on VA's estimated liability for veterans' compensation benefits. Based on our review of the 1996 estimated liability, we determined that the model used was limited in that it only considered those beneficiaries who were on the payment rolls as of September 30 of the fiscal year. In order to comply with SFFAS No. 5 the estimated liability must recognize veterans who had experienced an event (injury) but had not yet filed a claim and for increases in benefits other than COLAS. That recognition depends on estimates of veteran and survivor mortality, analysis of probabilities of future disability, and other predictions requiring actuarial expertise.

VA revised its model in an attempt to reflect each of these factors in its liability estimate disclosed in its fiscal year 1997 consolidated financial statements. Approximately 64 percent of the \$270 billion increase over what was reported in the consolidated financial statements of the U.S. government can be attributed to the (1) inclusion of veterans not currently receiving benefits but who had been injured while on active duty and (2) inclusion of survivors of veterans, such as dependent children and spouses, not currently receiving benefits but who are expected to. The increase was also significantly affected by factors not exclusively related to a specific cohort. These included factors such as changes in assumptions relating to mortality projections, estimates of nondeath terminations such as eligible veterans electing not to claim benefits or veterans being institutionalized, and projected changes in the rate of new entrants in all cohorts.

---

Both the old and revised model project beneficiary payments for 72 years and then discount them back to the present value. However, another major difference is the original model incorporated a perpetuity formula using assumptions from the 28th and 29th years of projection for years 30 through 72, while the new model specifically projects based on assumptions for each of the 72 years.<sup>2</sup>

---

## Scope and Methodology

This review was done as part of our audit of the fiscal year 1997 consolidated financial statements of the U.S. government. To meet our objectives, we contracted with the Ernst & Young LLP (E&Y) Actuarial Services Group (contractor) to assess VA's methodology and the appropriateness of actuarial-based assumptions and other actuarial judgments applied to VA's calculation of the fiscal year 1997 estimated liability for veterans' benefits.

Neither we nor E&Y audited the underlying data used in the model such as age, gender, and type of beneficiary (veteran, spouse, children, and mothers and fathers), and percentage of disability. These data come from compensation and pension systems within VA and external sources such as the Department of Defense and the Congressional Budget Office. The accuracy and completeness of the underlying data used in the model are equally important as the model. VA management is responsible for establishing, maintaining, and assessing the internal controls over the systems that produce such data. The OIG is currently reviewing the internal controls over the systems that produce the underlying data as well as obtaining assurance as to whether the data are accurate and complete as part of the audit of the fiscal year 1998 financial statements. Therefore, we are not reporting on whether the estimated liability reported in the financial statements is reasonable or reliable.

In order to rely on the work of the contractor, we evaluated the qualifications and independence of the contractor's staff, reviewed and approved the contractor's approach plans and work programs, attended key meetings between the contractor and VA personnel, and reviewed the contractor's working papers to determine (1) the nature, timing, and extent of work performed, (2) the extent of quality control methods used, and (3) whether evidence in the working papers supported the contractor's

---

<sup>2</sup>The actuary used 72 years, which is roughly the same as the period used by the Office of the Actuary of the Social Security Administration of 75 years.

---

conclusion concerning VA's methodology for calculating the reserve. We briefed VA officials and made the contractor's results available to VA for calculating the fiscal year 1998 estimate.

We performed our review of VA's actuarial model from September 1997 through November 1998 in accordance with generally accepted government auditing standards. We requested written comments on a draft of this report from the Secretary or his designee. The Secretary of Veterans Affairs provided us with written comments, which are discussed in the "Agency Comments" section and are reprinted in appendix I.

---

## Model Expanded to Reflect Active Military

In our report on the fiscal year 1997 consolidated financial statements of the U.S. government, we reported that VA's estimated liability for veterans' compensation benefits was materially understated because it did not include estimates for anticipated changes in disability ratings and for incurred claims not yet reported. Without including these estimates, VA's methodology did not comply with SFFAS No. 5.<sup>3</sup> VA revised its model to comply with SFFAS No. 5 prior to the issuance of VA's audited financial statements on April 30, 1998. Using the revised model, VA's estimate as of September 30, 1997, was \$466 billion--\$270 billion more than the \$197 billion estimate that was reported in the consolidated financial statements of the U.S. government.

While the revised model provides decisionmakers with significantly better information about probable future obligations than the estimates produced under the previous model, we found that the model needed further refinements to conform with SFFAS No. 5. Specifically, VA's new model did not account for the effect of active military personnel who--due to events that occurred while on duty--will probably be eligible for disability benefits upon leaving military service. This population needed to be factored into the provision for claims incurred but not reported, which is one of the elements required for a loss reserve.

Some of the 1.5 million active military personnel as of September 30, 1997, had already experienced the event (injury) that would result in

---

<sup>3</sup>SFFAS No. 5, Accounting for Liabilities of the Federal Government, became effective in fiscal year 1997. It requires recognition of an expense and the related liability for compensation benefits when a future outflow or sacrifice of resources is probable and measurable on the basis of events occurring on or before the reporting date.

compensation benefits subsequent to leaving the service. Although the total number of active duty personnel was only 6.6 percent of the population of veterans not then collecting compensation or pension benefits, historically the largest group of new beneficiaries are those recently separated from military service. Thus, active military may be the most significant population of potential new beneficiaries. We informed VA that the estimated liability associated with these incurred but not reported claims should be recognized and VA revised its model accordingly. VA officials told us that the projection of estimates for this population will increase the reported liability in its fiscal year 1998 financial statements by about \$12 billion.

## Data Need to Reflect More Historical Experience

VA's model for estimating the future liability for veterans' compensation benefits needs to be further refined to include changes and developments in veterans' disabilities over an expanded period of time. In general, the fiscal year 1997 liability estimate was based on the experience of the compensation program only over the past 3 fiscal years when data were available. For some components, only 1 or 2 years of data were available. This was due in part to the fact that VA had just begun to compile these data, some of which were not readily available, in an attempt to comply with the requirements of SFFAS No. 5. For example, only 1 year of data were available to predict future increases in veterans benefits, such as changes in disability ratings.

Relying on such a short time period can cause distortions in predicting future benefits. For example, if future benefits are predicted based on a limited period that represents only the time frame immediately following a conflict, when there may be an unusually large number of claims filed, the resulting estimate will most likely be inflated. Conversely, if the time period considered is during peacetime, when one would expect a low number of claims filed, the liability estimate will most likely be understated. Expanding the period over which experience is studied increases the credibility of the underlying assumptions and identifies trends and sensitivity to changes in economic conditions, resulting in more reasonable estimates.

For fiscal year 1997, the model grouped beneficiaries into cohorts<sup>4</sup> by

<sup>4</sup>Cohorts are identifiable groups within beneficiaries and potential beneficiaries. For example, 40-year old veterans are considered a cohort.



---

beneficiary type (veteran, spouse, child) and age. Future benefit payments were projected for each beneficiary type. VA's estimate relied on the historical experience with older veterans who served in World War I, World War II, and the Korean conflict and applied the result to younger veterans who served in Vietnam or the Gulf War in projecting new entrants, deaths, or other terminations. This methodology assumes that there are no more recent conflict-related exposures that would affect the projections. However, younger veterans had certain latent exposures that older veterans did not. For example, the experience of World War II and Korean War veterans would not have predicted some of the disabilities arising from the Vietnam War, such as Agent Orange. If VA beneficiaries had also been grouped by conflict, the model would have reflected the impact of conflict-related exposures.

Additionally, VA's model does not consider the time lag between date of discharge and date of initial benefit. This is an important consideration because the likelihood of a veteran filing a claim decreases the longer he/she is out of the service. For example, a 50-year old veteran who retired from military service a year ago would have a higher probability of receiving a disability benefit than a 50-year old veteran who was discharged from military service 25 years ago. If these data were considered along with age and benefit type, the model could better predict the likelihood of a veteran securing a benefit rather than just grouping veterans by age and beneficiary type.

---

## Conclusions

By revising its model, VA has significantly improved the reasonableness and reliability of its process for estimating its liability for veterans compensation benefits. It can improve the model further by examining the experience of more distinct groupings over an extended period of time. This would give VA a better chance of finding trends in the data that would lead to a more predictive and reasonable model.

---

## Recommendations

We recommend that the Secretary of Veterans Affairs direct the Under Secretary for Benefits to further improve its model for estimating VA's liability for veterans' compensation benefits by:

- Refining the estimates by continuing to evaluate the actual experience of the compensation programs and expanding the period over which experience is studied.

- 
- Considering the impact of conflict-related exposures and the time lag between discharge and date of initial award, in addition to age and type of veterans and beneficiaries, as indications of the propensity for veterans to secure compensation benefits.

---

## Agency Comments

In written comments on a draft of this report, the Secretary of Veterans Affairs concurred with our recommendations for improving the actuarial model. VA plans to obtain a contractor's assistance to help it make the improvements.

This report contains recommendations to you. The head of a federal agency is required by 31 U.S.C. 720 to submit a written statement on actions taken on these recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Reform within 60 days of the date of this report. A written statement also must be sent to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of this report.

We are sending copies of this report to the Chairmen and Ranking Minority Members of the House and Senate Committees on Veterans Affairs and the Director of the Office of Management and Budget. We will provide copies to others upon request. Should you or your staff have any questions, please contact me at (202) 512-4476 or Alana B. Stanfield, Assistant Director, Health, Education and Human Services, Accounting and Financial Management Issues, at (202) 512-3197.

Sincerely yours,



Gloria L. Jarmon  
Director, Health, Education, and Human Services  
Accounting and Financial Management Issues

# Comments From the Department of Veterans Affairs



DEPARTMENT OF VETERANS AFFAIRS  
ASSISTANT SECRETARY FOR POLICY AND PLANNING  
WASHINGTON DC 20420

JAN 13 1999

Mr. Gene L. Dodaro  
Assistant Comptroller General  
Accounting and Information Management Division  
U. S. General Accounting Office  
441 G Street, NW  
Washington, DC 20548

Dear Mr. Dodaro:

We have reviewed your draft report, ***FINANCIAL MANAGEMENT: Review of VA's Actuarial Model for Estimating the Liability for Veterans' Compensation Benefits*** (GAO/AIMD-99-46). We appreciate that GAO recognizes the progress the Department has made in improving its methodology for projecting veterans' compensation benefits liability.

The Department concurs with GAO's recommendations. Annually, the Veterans Benefits Administration will obtain contractor's assistance to:

- Continue refining the estimates of the liability for the Veterans' Compensation and Pension Program by evaluating the program's experience, and
- Determine the impact of conflict related exposures and develop time lag information between the time military personnel are discharged and award of benefits. This information, developed for age and type of veterans and beneficiaries, will be included in the actuarial model.

We appreciate the opportunity to comment on your report.

Sincerely,

A handwritten signature in black ink, appearing to read "Duffy".

Dennis Duffy

# Major Contributors to This Report

---

**Accounting and  
Information  
Management Division,  
Washington, D.C.**

Alana B. Stanfield, Assistant Director  
W. David Grindstaff, Assistant Director  
Martin J. Eble, Senior Auditor

---

### **Ordering Information**

**The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary, VISA and MasterCard credit cards are accepted, also.**

**Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.**

**Orders by mail:**

**U.S. General Accounting Office  
P.O. Box 37050  
Washington, DC 20013**

**or visit:**

**Room 1100  
700 4<sup>th</sup> St. NW (corner of 4<sup>th</sup> and G Sts. NW)  
U.S. General Accounting Office  
Washington, DC**

**Orders may also be placed by calling (202) 512-6000  
or by using fax number (202) 512-6061, or TDD (202) 512-2537.**

**Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.**

**For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:**

**[info@www.gao.gov](mailto:info@www.gao.gov)**

**or visit GAO's World Wide Web Home Page at:**

**<http://www.gao.gov>**

---

**United States  
General Accounting Office  
Washington, D.C. 20548-0001**

**Official Business  
Penalty for Private Use \$300**

**Address Correction Requested**

---

<p><b>Bulk Rate Postage &amp; Fees Paid GAO Permit No. GI00</b></p>
---

